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PROCUREMENT SECTION
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Maryland Watershed Progress Report

(Public Law 566)

USDA, Soil Conservation Service
College Park, Maryland

January 1978

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FOREWORD

In Maryland to date, there have been 41 applications for assistance under PL 83-566, the small watershed program. Those requests have come from all parts of Maryland--from the Appalachians in the western most part of the state to the Chesapeake Bay to the eastern most Atlantic shore.

This report gives the status of each of these watersheds and highlights the accomplishments of the program during the past year.



Gerald R. Calhoun
State Conservationist
USDA, Soil Conservation Service
Room 522, 4321 Hartwick Road
College Park, Maryland 20740

Telephone: 301-344-4180

MARYLAND SMALL WATERSHED PROGRAM PROGRESS REPORT
(Public Law 566, As Amended)

WATERSHEDS COMPLETED - 11

All structural and land treatment measures included as part of the original or revised Work Plans for the following Watershed are complete.

Application Number	Watershed and Location (Date Completed)
1	<u>Little Deer Watershed - Harford Soil Conservation District, Maryland (September 13, 1956)</u>
2	<u>Little Youghiogheny River Watershed - Garrett Soil Conservation District, Maryland (December 31, 1976)</u>
3	<u>Timmonstown Branch Watershed - Worcester Soil Conservation District, Maryland (June 30, 1963)</u>
4	<u>Gilbert Run Watershed - Charles and St. Mary's Soil Conservation Districts, Maryland (December 31, 1976)</u>
5	<u>Upper Rock Creek Watershed - Montgomery Soil Conservation District, Maryland (June 30, 1973)</u>
8	<u>Long Marsh Watershed - Queen Anne's and Caroline Soil Conservation Districts, Maryland (June 30, 1975)</u>
10	<u>Aydelotte Watershed - Wicomico Soil Conservation District, Maryland (July 1, 1971)</u>
11	<u>Ninepin Branch Watershed - Worcester Soil Conservation District, Maryland (June 30, 1968)</u>
12	<u>Franklin Branch Watershed - Worcester Soil Conservation District, Maryland (May 31, 1969)</u>
13	<u>Coonfoot Branch Watershed - Worcester Soil Conservation District, Maryland (May 31, 1969)</u>
24	<u>Passerdyke Watershed - Somerset, Worcester and Wicomico Soil Conservation Districts, Maryland (June 30, 1976)</u>

WATERSHEDS APPROVED FOR OPERATIONS - 8

Application
Number

Watershed and Location and Remarks

9

Marshyhope Creek Watershed - Caroline and Dorchester Soil Conservation Districts, Maryland and the State of Delaware

The flood control channel through the town of Federalsburg and 41.5 miles of multiple-purpose channel in this watershed have been completed. Organization plan development is underway on the Faulkner Branch P.D.A. (31.0 mi.) and complete on the Newport-Meadow P.D.A. (9.5 mi.) systems. Construction on these channel modification units will begin in mid-calendar 1978. Construction units in Maryland portion are 45 percent complete.

14

Shingle Landing Watershed - Worcester Soil Conservation District, Maryland

Construction of the Middle Branch and Birch Branch tributaries has been completed. The sponsors have requested tabling of construction on the South Branch until a Public Drainage Association can be organized. The South Branch will require an environmental review prior to initiating any plans for installation. Construction units are 60 percent complete. About 30 percent of the planned land treatment has been applied.

15

Dividing Creek Watershed - Somerset, Wicomico and Worcester Soil Conservation Districts, Maryland

Construction of 56.2 miles of multiple-purpose channels in this project is complete (about 70 percent of that planned). 68 percent of the planned land treatment has been applied.

16

Upper Choptank River Watershed - Queen Anne's and Caroline Soil Conservation Districts, Maryland and the State of Delaware

The Marydel P.D.A., a 0.7 mile tributary, was completed in 1975. The Coolspring P.D.A. is organized and the construction should begin on this construction unit in early calendar 1978. Construction units in Maryland portion are 5 percent complete.

22

Upper Manokin Watershed - Somerset Soil Conservation District, Maryland

The town of Princess Anne has acquired the land rights for the fish and wildlife development. The SCS with assistance from the sponsors and other federal and state agencies has completed 90 percent of an environmental assessment of the fish and wildlife development area. The layout of the facility chosen by the sponsors will determine the necessity of an environmental impact statement. Planned land treatment applied to date is 90 percent complete.

25 Goldsboro Watershed - Caroline Soil Conservation District,
Maryland

27 of the 54 miles of stream modification in this project are complete. 48 percent of the land treatment planned has been applied. Any additional structural measures will require preparation of an environmental impact statement.

27 St. Mary's River Watershed - St. Mary's Soil Conservation
District, Maryland

The Maryland Fisheries Administration, a sponsor, has built Dam No. 1 of the project. Dam No. 1 is a multiple-purpose structure that contains storage for a fish and wildlife development. The State of Maryland, through the Department of Natural Resources, is now purchasing land rights for Dam No. 2. This will be a multiple-purpose structure that will provide a recreation development in conjunction with a State Park. In addition, 3 single-purpose flood prevention impoundments are planned. 43 percent of the planned land treatment has been completed on the cropland and 77 percent on grassland and woodland.

32 Piney Run Watershed - Carroll Soil Conservation District,
Maryland

The multiple-purpose structure is complete. Carroll County is installing recreation facilities at this site and has completed area A and is proceeding with area B. The installation of land treatment measures in the watershed is proceeding and is over 90 percent complete.

WATERSHEDS IN PLANNING STAGE - 5

Application
Number

Watershed and Location and Remarks

28

Little and Middle Patuxent River Watershed - Howard Soil Conservation District, Maryland

The sponsors are currently reviewing alternative plans presented in the Preliminary Investigation Report of September 1977. Should the sponsors select a PL 83-566 qualifiable alternative, the watershed plan and environmental impact statement are to be scheduled for completion in Fall 1978.

31

Upper Casselman River Watershed - Garrett Soil Conservation District, Maryland and Somerset Soil Conservation District, Pennsylvania

The Garrett County Commissioners in February 1976 reaffirmed their interest in this project following a January Public Meeting and restudy of the proposal. Primary interest is in one tributary where floodwaters damaged a clay products industry.

34

Piscataway Creek Watershed - Prince George's Soil Conservation District, Maryland

The Preliminary Investigation Report is scheduled for completion in January 1978. Structural elements considered in alternative plans are multiple-purpose (Recreation and Emergency Water Supply) impoundments.

36

Seneca Creek Watershed - Montgomery Soil Conservation District, Maryland

A Preliminary Investigation Report was completed in July 1977. The sponsors have selected a plan involving one large multiple-purpose impoundment and land treatment measures. A preliminary draft of the watershed plan and environmental impact statement will be completed in December 1977 and is expected to be finalized by June 1978.

41

Upper Chester River - Kent and Queen Anne's Soil Conservation Districts, Maryland and the State of Delaware

The watershed was authorized for planning in February 1977 and a Preliminary Investigation Report is scheduled for completion in April 1978.

FIELD EXAMINATION STAGE - 3

<u>Application Number</u>	<u>Watershed and Location and Remarks</u>
18	<u>Rehobeth Watershed - Somerset Soil Conservation District, Maryland</u> Field surveys are essentially complete. Land use studies and engineering designs have been completed. Economic evaluation studies need to be completed.
30	<u>Middletown Branch Watershed - Dorchester Soil Conservation District, Maryland</u> The sponsors have obtained a consultant to make an environmental assessment of the proposed project and a by-pass alternative at the lower end of the watershed. Prior to gaining detailed planning authorization the Field Examination Report will need to be updated to reflect the environmental assessment and the effects of the project.
39	<u>Mattawoman Watershed - Prince George's and Charles Soil Conservation Districts, Maryland</u> The State Soil Conservation Committee in November 1972 granted a priority to the sponsors of this project to begin the field examination. Resources have not been available to proceed further with it.

WATERSHEDS WITH PLANNING SUSPENDED OR TERMINATED - 8

Application
Number

Watershed and Location and Remarks

6 Little Antietam Watershed - Washington County Soil Conservation District, Maryland

Planning was terminated June 1, 1976 because of little local interest in the project.

7 Little Beaver Watershed - Washington County Soil Conservation District, Maryland

SCS suspended detailed watershed planning when it became evident that a feasible solution could not be found.

17 Corsica River Watershed - Queen Anne's Soil Conservation District, Maryland

The County Commissioners, one of the sponsors, have indicated they are not willing and able to carry out the work plan at this time. The State Conservationist terminated planning assistance as of February 26, 1971.

23 Western Run Watershed - Baltimore County Soil Conservation District, Maryland

Planning has been suspended as a result of findings presented to the local people in April 1976 which indicated conventional SCS approaches to providing flood prevention in this watershed are not appropriate. A flood hazard analyses report has been prepared for a portion of this watershed.

26 Big Pipe Creek Watershed - Carroll Soil Conservation District, Maryland

The watershed plan and environmental impact statement was transmitted to Office of Management and Budget June 30, 1976. It had been prepared under phase in procedures of the Water Resource Council Principles and Standards. Subsequently the Maryland Water Resources Administration on September 14, 1976 indicated that a hydrologic study of the groundwater resources in the project area would need to be conducted before it could approve a plan development permit and other permits needed for installation of the impoundment structure. The plan was withdrawn from OMB in April 1977. Once the groundwater resource has been explored, if the selected plan remains to be an impoundment then the watershed plan and environmental impact statement will need to be revised accordingly to reflect any changes in planning standards since its original development.

29 Catoctin Creek Watershed - Catoctin Soil Conservation District,
Maryland

Detailed planning assistance was suspended as of September 6, 1973, due to problems encountered in conducting geologic investigations and lack of consolidated support for the project by the Frederick County Government.

33 Big and Little Elk Creek Watershed - Cecil Soil Conservation
District, Maryland and Chester Soil Conservation District,
Pennsylvania

To date no agreement has been reached on the use of water by Chester and Cecil County officials. Planning activity has been suspended until an agreement is reached on water rights.

40 Beaverdam Creek Watershed - Wicomico Soil Conservation
District, Maryland

SCS suspended detailed planning when the channel system was improved under an ACP pooling agreement and other project purposes were not considered feasible due to economic justification.

PENDING APPLICATIONS - 6

<u>Application Number</u>	<u>Watershed and Location</u>
19	Marumsco Watershed - Somerset Soil Conservation District, Maryland
20	Turkey Branch Watershed - Somerset Soil Conservation District, Maryland
21	Kings Creek Watershed - Somerset Soil Conservation District, Maryland
35	Forge Branch - Caroline Soil Conservation District, Maryland
37	Pocomoke River - Sussex Soil and Water Conservation District, Delaware; Worcester Soil Conservation District, Wicomico Soil Conservation District, and Somerset Soil Conservation District, Maryland; Eastern Shore Soil and Water Conservation District, Virginia
38	Patapsco River - Anne Arundel, Baltimore County, Howard and Carroll Soil Conservation Districts and City of Baltimore, Maryland

WATERSHED PROTECTION (PL-566) PROGRAM STATUS - MARYLAND

Name	County	Size (Acre)	State Committee	Prelimi-	Work Plan		Approved for Ope.	Project Completed	PL-566	OTHER	TOTAL
				nary Investiga-	Approved for Planning	Termina-tions (T) and Suspen-sions (S)					
1. Little Deer Creek <u>1/</u>	Harford	10,112	11-54	-	2-9-55	5-56	6-9-61	6-30-70	282,443	65,886	348,329
2. Little Youghiogheny River <u>2/</u>	Garrison	26,275	2-55	-	4-15-55	3-56	5-2-67	3-14-57	1,770,514	852,496	2,623,040
3. Timmonstown Branch <u>1/</u>	Worcester	8,655	3-55	-	8-25-55	2-57	-	6-30-63	203,715	150,263	354,008
4. Gilbert Run Run <u>3/</u>	Charles	28,622	10-55	-	1-6-56	12-58	12-20-65	8-7-59	2,946,597	702,662	3,649,299
5. Upper Rock Creek <u>2/</u>	Montgomery	38,765	12-56	-	1-8-57	12-62	10-6-67	6-20-63	1,414,322	2,822,880	4,237,202
6. Little Antietam	Washington	20,119	5-57	-	4-15-58	6-1-76 ^T	-	-	-	-	-
7. Little Beaver?	Washington	5,500	5-57	-	4-15-58	(4)	-	-	-	-	-
8. Long Marsh <u>2/</u>	Queen Anne's & Caroline & Del. has Admin. Responsibility	27,363	7-57	-	4-15-58	1-60	6-2-70	8-31-60	1,021,901	407,992	1,429,893
9. Marshyhope Creek, Md. <u>2/</u>	Caroline & Del. has Admin. Responsibility	40,240	9-26-57	-	6-6-58	1-6-64	-	8-19-64	-	3,710,594	1,205,257
10. Aydelotte Branch <u>1/</u>	Wicomico	12,470*	9-59	6-61	8-15-61	8-62	-	8-30-62	7-1-71	520,132	260,000
11. Ninepin Branch <u>1/</u>	Worcester	6,300	7-26-61	4-62	6-18-62	3-63	-	4-1-63	6-30-68	167,384	94,843
12. Franklin Branch <u>1/</u>	Worcester	3,162	7-26-61	3-63	5-20-63	3-64	-	6-25-64	5-31-59	82,461	55,204
13. Confoot Branch <u>2/</u>	Worcester	3,752	7-26-61	3-63	5-20-63	4-64	-	6-30-64	5-31-69	58,795	137,665
14. Shingle Landing <u>3/</u>	Worcester	11,670	7-26-61	4-28-66	10-23-67	8-68	-	11-26-68	518,860	127,000	645,860
15. Dividing Creek <u>2/</u>	Worcester & Wicomico	11,900	7-26-61	7-1-66	7-15-68	12-73	-	7/19/74	-	1,816,318	735,746
16. Upper Choptank River <u>2/</u>	Queen Anne's Del. has Admin. Responsibility	10,260	11-61	4-62	6-18-62	5-65	-	9-10-65	-	917,268	208,800
17. Corsica River	Queen Anne's Somersett	15,865	7-2-62	7-2-62	7-26-65	2-26-71 ^T	-	-	-	-	-
18. Rehoboth	Somerset	5,000	7-2-62	-	-	-	-	-	-	-	-
19. Marumsco	Somerset	14,000	7-2-62	-	-	-	-	-	-	-	-
20. Turkey Branch	Somerset	3,000	7-2-62	-	-	-	-	-	-	-	-
21. Kings Creek	Somerset	9,096	7-2-62	-	-	-	-	-	-	-	-
22. Upper Manokin <u>2/</u>	Somerset	7,883	7-2-62	10-64	2-15-65	10-65	-	12-1-65	-	458,909	304,000
23. Western Run <u>3/</u>	Baltimore	55,000	8-13-62	(8)	4-76	S	-	-	-	-	-
24. Passerdyke <u>2/</u>	Wicomico, Somerset & Worcester	7,840	11-15-63	6-65	7-26-65	4-66	8-27-69	5-24-66	6-30-76	526,966	189,000

WATERSHED PROTECTION (PL-566) PROGRAM STATUS - MARYLAND

Name	County	Size (Acre)	Applia- Approved by State Committee	Prelimi- nary Investiga- tion Report	Approved for Planning	Termina- tions (T) and Suspens- (S)	Work Plan			Project Cost				
							Suppl. Work Plan	Com- pleted Oper.	Proj. Com- pleted	PL-566	OTHER	TOTAL		
25. Goldsboro ^{2/}	Caroline	9,250	12-20-63	7-1-66	9-19-66	-	7-67	-	7-25-67	-	775,413	343,400	1,118,813	
26. Big & Little Pipe Creek ^{3/}	Frederick & Carroll	123,520	12- 4-64	9-12-66	12-18-67	3-77 S	6-76 ^{2/}	-	9-29-70	-	2,862,500	3,539,500	6,402,000	
27. St. Mary's River ^{2/}	St. Mary's	20,000	6- 7-65	6-23-66	7-25-66	-	6-69	12-72	-	-	2,559,593	3,870,300	6,429,893	
28. Little & Middle Patuxent ^{2/}	Howard	70,000	6- 7-65	9-77	2-21-69	-	-	-	-	-	990,300	1,053,000	5,003,300	
29. Catoctin Creek ^{2/}	Frederick	95,000	10-15-65	8-68	7-22-69	9-6-73 S	-	-	-	-	2,679,100	2,309,400	4,988,500	
30. Middletown Branch ^{2/}	Dorchester	6,748	10-15-65	10-25-66	-	-	-	-	-	-	264,540	95,600	360,140	
31. Upper Casselman River ^{5/}	Garrett (Md.) & Somerset (Pa.)	84,100	2-21-66	6-69	12- 9-69	-	-	-	-	-	1,820,200	2,630,300	4,450,500	
32. Piney Run ^{2/}	Carroll	11,700	2-21-66	9-15-66	4-10-67	-	5-68	6-72	8-27-69	-	887,617	2,135,000	3,022,617	
33. Big and Little Elk ^{2/}	Cecil (Md.) & Chester (Pa.)	68,430	5-20-66	8-69	10-5-70	6-76 S	-	-	-	-	-	-	-	
34. Piscataway Creek ^{2/}	Prince Georges	42,000	6-12-67	5-18-72	10-20-72	-	-	-	-	-	-	-	-	
35. Forge Branch	Caroline	14,500	6-17-68	-	-	-	-	-	-	-	-	-	-	
36. Seneca Creek	Montgomery	82,479	2-17-69	-	6/30/75	-	-	-	-	-	-	1,480,400	15,659,400	17,139,800
37. Pocomoke River - Sussex, Del., Somerset, Worcester, Wicomico, Md., Accomack, Va.														
38. Patapsco	Anne Arundel, Carroll Baltimore, Howard Prince Georges, Charles Wicomico	234,300	12-15-69	-	-	-	-	-	-	-	-	-	-	
39. Mattawoman Creek		236,315	12-57 ^{1/}	-	4-15-58 ^{10/}	9-27-60 ^{8/}	-	-	-	-	-	-	-	
40. Beaverdam Creek		50,468	3-15-71	-	-	-	-	-	-	-	-	-	-	
41. Upper Chester River Queen Anne, Kent Co. (Md.) & New Castle Co. (Del.)		16,384	11-55	-	1- 6-56	2 - 9-59 S	-	-	-	-	-	-	-	
Other Proj.: Georges Creek	Allerary & Garrett	90,000	1-20-72	-	2-10-77	-	-	-	-	-	-	-	-	
		47,870	-	(4)	-	-	-	-	-	-	-	-	-	

^{1/}

Final cost of completed project.

^{2/} Based on recent Environmental Impact Statement.

^{3/} Work Plan estimate or up-date estimate (SCS 207).

^{4/} Suspended 12-60, terminated 4-66, reactivated 11-65, as Appalachia water resource study. Appl. Report completed 4-15-67.

^{5/} Preliminary Investigation Estimates.

^{6/} Estimated cost to complete Project (1971).

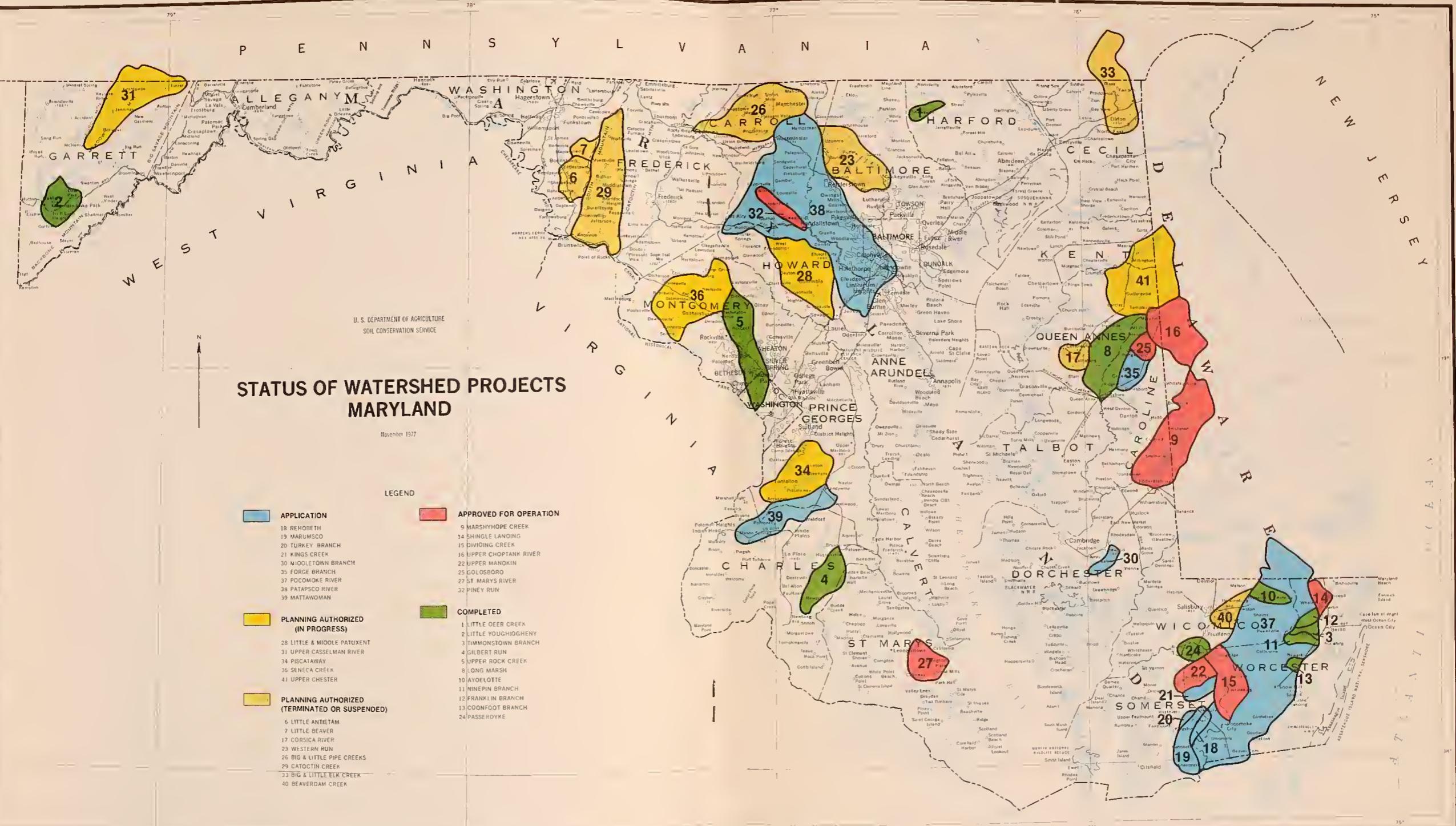
^{7/} Patapsco, Beaver Middle Run, Carroll County, Approved by State Committee 12-21-70. Amendment to change to Patapsco and increase the area from 16,191 acres.

^{8/} Approval for planning and termination of planning refers to the original application on Beaver Middle Run.

^{9/} Subsequently withdrawn to await hydrogeologic studies by the state and sponsors and to be revised accordingly by current plan and BIS filed with OMB 6-30-76. Subsequently withdrawn to await hydrogeologic studies by the state and sponsors and to be revised accordingly by current planning standards.

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ANNUAL PROGRESS SUMMARIES
MARYLAND

Dividing Creek Watershed (PL-566) Wicomico, Worcester,
and Somerset Counties, Maryland

Fiscal Year 1977

Project in Brief: Authorized - July 19, 1974. Estimated completion - fiscal year 1981. Area - 41,900 acres (17 percent cropland, 82 percent forest land, and 1 percent other uses). Sponsors - the Soil Conservation Districts of Wicomico, Somerset, and Worcester Counties; the Wicomico County Council and Worcester and Somerset County Commissioners. The above sponsors formed the Dividing Public Drainage Association in May 1975.

Estimated total cost of the project is \$2,552,064. PL-566 funds will bear \$1,816,318 of this cost with the remaining \$735,746 to be borne by other funds. Major watershed problems consist of inadequate drainage and periodic flooding to agricultural land and to roads and bridges at road crossings.

Progress in Land Treatment: There are 369 operating units, (mostly family owned), involving 37,111 acres within the watershed. There are 134 signed cooperative agreements covering 28,572 acres. One hundred, eighteen units involving 14,018 acres have basic conservation plans. Two hundred fifty-one thousand, three hundred and forty-one feet of drainage mains and laterals and 7,070 feet of subsurface drains have been installed to date. Sixteen ponds have been completed. Forestry accomplishments to date consist of tree planting on 446 acres; 697 acres of softwood sites preparation; and 402 acres woodland improved harvesting. To date, 68 percent of the planned land treatment has been applied. Thirty-two percent of the watershed is adequately protected.

Progress in Structural Measures: Construction on Unit No. 1 was completed on June 13, 1977. Total construction cost was \$692,521.56. A total of 56.2 miles of channel improvements were constructed; 404 water control structures installed and 228.2 acres of critical areas were seeded.

Case Histories of Watershed Project Benefits: None to date.

Progress in Obtaining Easements and Rights-of-Ways: All easements and rights-of-way have been obtained for construction Unit No. 1 through formal organization of the Dividing Public Drainage Association under Maryland Drainage Law.

* * * * *

Gilbert Run Watershed (PL-566) Charles and St. Mary's Counties

Fiscal Year 1977

Project in Brief: Authorized - August 7, 1959. Completed - 1977. Area - 28,622 acres. Sponsors - Charles and St. Mary's Soil Conservation Districts, Charles County Commissioner, Gilbert Run Public Watershed Association and the Charles County Board of Parks and Recreation. A supplemental watershed work plan was prepared and approved in December 1965 to include multipurpose usage of recreation and flood protection, cost-sharing for recreation construction, land acquisitions and minimum basic facilities. Total cost of the project - \$3,649,359 (\$2,946,597 PL-566 and \$702,662 non-Federal). Principle problems - floodwater and sediment damage to agricultural land, roads, bridges and a need for recreation facilities. Land ownership and use - all privately owned and mostly owner operated family type farms; 9,318 acres cropland; 2,339 acres grassland; 16,091 acres woodland; 874 acres other uses. Major agriculture products - tobacco and timber.

Progress in Land Treatment: Of the 195 farms in the project, 162 farms containing 21,001 acres are district cooperators and 147 farms containing 18,056 acres have complete soil and water conservation plans. Twenty-five thousand, two hundred thirty-one acres are adequately treated. Eighty-nine percent of the watershed is adequately protected.

Forestry accomplishment in the watershed includes 36 management plans involving 2,268 acres. Fifty-three forest landowners have been assisted and 11,800 trees have been planted on 12 acres. Hydrologic cultural operations have been carried out on 192 acres. Spot tree plantings on 113,400 trees have been carried out on 196 acres of forest.

Progress in Structural Measures: Two floodwater retarding structures and one multipurpose structure (recreation and flood protection) have been completed and have been turned over to the sponsors for operations and maintenance. The total construction cost of these three structures was \$597,906 of which \$564,047 were PL-566 funds and \$33,859 were other funds. Recreation facilities were completed in September 1974. The total construction cost of these facilities was \$639,381. During fiscal year 1976, \$2,936 was spent for boat dock repairs due to faulty construction and \$463 for a bronze marker. Eleven point two miles of channel modification were completed in November 1972 at a cost of \$1,086,724. This project has been closed out as of December 31, 1976. All land rights for the project are estimated to have totalled \$90,000.

Case Histories of Watershed Project Benefits:

Flood Damage Reduction - There was no flooding of roads or cropland from five inches of rain that fell during the week of August 20, 1967. There

was no damage suffered to roads, farmland, etc. as the result of "out of bank" flow during tropical storm Agnes in June 1972. All damage suffered to crops, etc. were from upland flows. However, repair to the channel and structures amounted to \$448,928. Two thousand, nine hundred and forty-eight dollars paid to three farmers for emergency conservation practices resulting from the storm Agnes.

Drought Relief - During the 1966, 1969, and 1976 summer droughts, water was released from the two sediment retention reservoirs. Without this release there would have been no livestock water or water for wildlife on 35 downstream farms. The Gilbert Run Public Watershed Association received an award from the National Wildlife Federation in 1966 for releasing water from the two floodwater retarding structures.

Land values have increased throughout the project area. Nearly all local people state that the project has been good for the economy of the county.

* * * * *

Goldsboro Watershed (PL-566) Caroline County

Fiscal Year 1977

Project in Brief: Authorized - August 25, 1967. Area - 9,250 acres (all privately owned). Sponsors - Caroline County Commissioners, Caroline Soil Conservation District, Broadway Public Drainage Association. Estimated total cost - \$1,118,813 (\$775,413 PL-566 and \$343,400 other). The principal problems - floodwater damage, sediment damage, erosion damage and water management problems. Majority of farms are owner-operated with 3,985 acres of cropland; 466 acres of pastureland; 4,415 acres of woodland and 474 acres in other use.

Progress in Land Treatment: Of the 124 farmers in the project, 55 are district cooperators with 7,428 acres. There are 41 farmers with basic plans on 6,088 acres. Of the 40 miles of mains and laterals needed 18.6 miles have been completed. To date, 23,439 feet of tile has been installed. Of the 5,050 acres of conservation cropping systems planned, 4,876 acres are on the land. Crop residue use is being applied on 4,600 acres. Forestry accomplishments consist of assisting 20 woodland owners; 8 management plans involving 150 acres with 19 acres of tree planting; 51 acres of improved harvesting has been completed. To date, 48 percent of planned land treatment is accomplished. Fifty-nine percent of the watershed is adequately protected.

Progress in Structural Measures: Approximately 60 percent of the design

surveys are complete. The Broadway Public Drainage Association has been completed. Twenty-six point eight miles of multiple purpose channel or about 50 percent of the total has been installed at a cost of \$247,420.

Case Histories of Watershed Project Benefits: Several farmers in the Broadway system have reported that they are now able to plant and harvest their crops in time without the losses that they expected before the system was installed. With Broadway construction complete, farmers in the watershed are starting to improve on-farm drainage by installing open drains and tile systems. There was an increase in no-till soybeans in the area of the completed works of improvement.

* * * * *

Little Youghiogheny River Watershed (PL-566) Garrett County

Fiscal Year 1977

Project in Brief: Authorized - March 14, 1957. Supplemental Work Plan - May 2, 1967. Completion Date, Dam Construction - Spring, 1972. Completion Date, Dam #6 Recreation Facilities - December 1974. Watershed Area - 26,275 acres, all privately owned. Sponsors - Garrett Soil Conservation District; City of Oakland, Maryland; County Commissioners of Garrett County, Maryland; Wilson Run Public Watershed Association. Cost - \$2,623,040 of which \$1,770,544 is PL-566 and \$852,496 other. Principal watershed problems have been floodwater damage in and near Oakland, Maryland, and the need for additional water supply and water-based public recreation in the Oakland area. Land use in the watershed is 8,617 acres of crop and hay land; 4,872 acres of pasture; 10,731 acres of woodland; 424 acres of urban land and 1,531 acres idle. All farms are owner-operated.

Progress in Land Treatment: There are 191 farms in the watershed. One hundred and sixty-four of these are cooperating with the Soil Conservation District and one hundred and fifty-six have complete conservation plans. The land treatment program in the watershed is completed. The most important land treatment measures are grassland improvement, tree planting, contour stripcropping and tile drainage. Forestry accomplishments include critical area stabilization along logging roads, tree planting and hydrologic cultural operations. One hundred and fifty-one forest landowners have been assisted. Urban developers are being provided assistance in the planning and application of erosion and sediment control practices. Ninety-two percent of the watershed is adequately protected.

Progress in Structural Measures: Six floodwater retarding structures

were included in the original work plan. A supplemental work plan approved in May 1967 changed the #6 Dam from a single-purpose structure to a multi-purpose dam with municipal and recreation water in addition to floodwater storage. All six dams have been constructed, with the #6 Dam having been completed in July, 1972. Work is completed on the recreation facilities contract for Broadford Lake (Site #6). All planned measures in this project are completed. Project was closed out as of December 31, 1976. Construction cost for the six impoundments totalled \$1,540,769.

Progress in Obtaining Easements and Right-of-Way: Sponsors obtained easements for five single-purpose structures at a total cost of \$24,030.40. Twenty-eight ownerships are involved in these easements. For the multi-purpose dam, sponsors purchased 399 acres of land in 25 tracts. The total purchase price was \$135,662.69.

Case Histories of Watershed Project Benefits: There have been no serious storms in the immediate area since the six dams were completed; however, the heavy snow melt in the Spring of 1972 as well as the relatively high runoff associated with Hurricane Agnes in June, 1972, would have caused some damage without the dams. No damage occurred in either instance. Prior to construction of Dam #6, the five dams which had already been constructed prevented any damage during several periods of snow melt and heavy rains that would have otherwise caused significant flooding. Twenty business establishments in areas formerly subject to flood damage have either rebuilt or made major improvements since the dams were built. The greatest single benefit is the establishment of a very desirable industry, made possible by the municipal water storage feature of the #6 Dam. The industrial plant, which was built at a cost of over \$6,000,000, began limited operations early in 1971. The operation began by employing over 200 people and at the present time has a working force of about 350. Capacity of the present plant is 495. Current plans call for future plant expansion to an employment capacity of about 1,000 people. The initial impact of this industry, on a community badly in need of employment opportunities, has been quite significant and the final effect should be tremendous. Among the most important advantages is the availability of promising career opportunities for young people in the community. Employees are now pursuing the Industrial Management Technology course at Garrett Community College in preparation for future managerial roles.

Safe yield of municipal water from the #6 Dam is calculated at 1,500,000 gallons per day. The City of Oakland has constructed a water treatment plant capable of handling the entire safe yield. The new industry has projected an estimated need of 800,000 gallons per day when it reaches employment of 1,000 persons, leaving significant amount of water available for further development in the area. No other source of water in the area could have supplied the needs of this new industry nor would the City of Oakland have had this abundant reserve supply for further

development. The recreation facilities provide the basic needs for picnicking, swimming, fishing, and limited boating and sailing. The demand for nearby residential building sites has increased steadily. A new elementary school and a new middle school have been constructed.

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Passerdyke Creek Watershed (PL-566)
Wicomico, Somerset, and Worcester Counties, Maryland

Fiscal Year 1977

Project in Brief: Authorized - May 24, 1966. Completed - fiscal year 1977. Area - 7,640 acres (all privately owned). Land use in the watershed consists of 29 percent cropland; 4 percent pasture; 2 percent idle; 63 percent forest and 2 percent other uses. Sponsors - the Soil Conservation Districts of Wicomico, Somerset, and Worcester Counties along with the County Commissioners of Somerset, Worcester and Wicomico County Council. The Somerset County Commissioners and the Somerset Soil Conservation District have assisted in the formation of the Barkley Branch portion of the watershed. The Passerdyke main and 16 tributaries, the remainder of the Passerdyke Watershed, formed the Passerdyke Public Drainage Association in January, 1971. The Passerdyke main is the county boundary between Wicomico and Somerset Counties with a small segment of the main reaching into Worcester County.

Estimated total cost of the project is \$715,966. PL-566 funds provided \$526,966 of this cost and the remaining \$189,000 was borne by other funds. Watershed problems consist of floodwater damage and inadequate natural drainage on the agricultural lands and high bridge and road maintenance costs resulting from frequent flooding of these facilities.

Passerdyke Creek Watershed PL-566 was completed June 30, 1976.

Progress in Land Treatment: There are 103 operating units, involving 7,365 acres within the watershed. Fifty operating units covering 3,868 acres are under cooperative agreement with the Soil Conservation Districts of Wicomico, Somerset, and Worcester. Forty-seven properties involving 3,686 acres have basic conservation plans. Forty-one thousand, three hundred and twenty-two feet of drainage channels (mains and laterals) have been completed to date. Eighty-seven percent of the watershed is adequately protected.

Forestry accomplishments to date consist of 26,000 trees planted on 30 acres along with the development of two management plans involving 126 acres.

Progress in Structural Measures: In September, 1973, all construction

was completed consisting of 25.6 miles of outlet channel and 127 water control structures with 91.7 acres of critical area planting and with 269,854 linear feet of access roads at a construction cost of \$290,546.

Easements and Rights-of-Way: All easements and rights-of-way were obtained through formal organization of two public drainage associations by the Maryland Drainage Law.

Case Histories of Watershed Project Benefits: A 24 hour rain storm on August 21 and 22, 1972 was reported to be in excess of nine inches. There was some flooding of low lying fields and road crossings at culverts with minimum damage to crops and roads. The constructed channel improvements considerably reduced flooding.

A county EJUAA crew funded by Title X completed maintenance work consisting of hand clearing of woody vegetation in early 1977.

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Piney Run Watershed (PL-566) Carroll County

Fiscal Year 1977

Project in Brief: Authorized - August 29, 1969. Area - 11,700 acres. Land use - 56 percent cropland; 19 percent pasture; 25 percent woodland and other, 87 percent of the watershed is in private ownership. Sponsors - Carroll Soil Conservation District, the Carroll County Commissioners, the Carroll County Recreation and Parks Board, the Carroll County Sanitary Commission, and the State of Maryland. The primary problems in the watershed were floodwater damages to roads, bridges, residences, industrial and commercial enterprises; inadequate water supplies, and a need for water-based recreation facilities. Estimated total cost - \$3,022,617 (\$887,617 - PL-566 and \$2,135,000 other).

Progress in Land Treatment: Of the 53 farms in the project, 30 are district cooperators (including the County Commissioners and their lands for the flood control dam and lake area). All of the district cooperators have basic conservation plans. During the project period 1.4 miles of open ditch; 4,591 feet of tile and 1,756 feet of diversion have been constructed. There are 2,950 acres on which conservation cropping system is being carried out; 1,410 acres of strip cropping; 2,020 acres of crop residue use; 17 acres of sod waterway; 1,850 acres of pasture management; 326 acres of pasture planting; 214 acres of wildlife habitat development; 40 acres of critical area seeding; and 67 acres of recreation area improvement in the watershed. To date 10 ponds have been constructed in the watershed. The County Planning Commission has re-zoned an area around the lake site to "conservation" requiring all house lots within the area to be a minimum of 3 acres in size. Seventy-one percent of the watershed is adequately protected.

Forestry management plans have been written for 11 properties involving 292 acres. A total of 50 landowners have been contacted for which assistance was provided to 32 landowners. One hundred forty acres (101,500 trees) of new trees have been planted during the project period, 120 of the acres were on county owned land around the reservoir. Belts of wildlife shrubs were interplanted among the tree plantings. In addition to tree planting, 201 acres of existing woodland were marked for intermediate harvest cutting and 4.3 miles of fire trails were constructed.

Essentially all of the land treatment planned under the accelerated program has been applied.

Progress in Structural and Recreational Measures: The construction of the dam is now complete and the lake is filled to the normal water level. The county commissioners have completed construction of the first recreation area which consists of two boat ramps, three parking areas (two for the boating area and one for the picnicking and active recreation area), two tennis courts, two comfort stations (one for the boat ramp area and one for the picnic area) and several small picnic table areas. Three floating piers have been installed and an additional picnic area developed in 1977.

Construction of the dam and associated appurtenances cost \$883,722. The recreational facilities are being installed at a total local cost estimated to be \$1,000,000. Forty landowners were involved in land rights acquisitions. The total estimated land rights cost was \$850,000 with PL-566 bearing \$169,000. Five occupied dwellings and one farm operation were involved in relocations at an estimated cost of \$65,000.

Case Histories of Watershed Project Benefits: On September 21, 1975 rainwater (Storm Eloise) began to fall in the Carroll County (Piney Run Watershed area) until the night of September 25, 1975. Many of the county low lying areas were flooded. The flooding covered many acres of land and washed out railroad beds, road crossings, and flooded homes. Storm Eloise was approximately a 100 year frequency storm. The Piney Run Watershed dam filled to its design crest level at approximately 10:00 a.m. on September 26, 1975 with only a small amount of water (area approximately six feet wide and one inch deep) passing through the 250 foot wide emergency spillway during the day.

The flood control dam performed its function as planned with only very minor maintenance work needed following the storm. Springfield State Hospital complex, location approximately one mile below the dam, suffered severe flooding problems of their service facilities during 1972 Storm Agnes but experienced no interruptions of services during Storm Eloise of 1975 following construction of the Piney Run flood control project.

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St. Mary's River Watershed (PL-566) St. Mary's County

Fiscal Year 1977

Project in Brief: Authorized - September 29, 1970. Area - 20,000 acres all privately owned, much of it wooded. There are approximately 500 acres of developed land in the upper reaches of the watershed with the town of Great Mills being the principal recipient of flood control benefits. Land use - 12 percent cropland; 5 percent pasture; 73 percent woodland, and 10 percent other. Sponsors - the St. Mary's Soil Conservation District, St. Mary's Board of County Commissioners, and the Maryland Department of Natural Resources. Upon completion, the two largest structures of the five planned will become state operated facilities. One will be maintained by the Maryland Department of Natural Resources as a fish and wildlife structure. The second will form the nucleus of a state park. Total estimated project cost - \$6,429,893 (\$2,559,593 PL-566 and \$3,870,300 other).

Progress in Land Treatment: Of the 151 operating units (13,960 acres), 70 units totalling 9,816 acres are under cooperative agreement with the St. Mary's Soil Conservation District. Conservation plans covering 4,564 acres have been written on 54 farms. Forty-three percent of the planned land treatment has been completed on the cropland and more than 79 percent of grassland and woodland. Major practices installed to date include 6,280 feet of field ditches; 4,850 feet of diversions; 125 acres of stripcropping; 12 farm ponds; 320 acres of pasture management; 688 acres of crop residue management; and 1,445 acres of conservation cropping systems. Eighty-two percent of the watershed is adequately protected.

Forestry accomplishments to date include over 80,000 trees planted on 124 acres; 174 acres marked for harvest; 50 acres marked for thinning; 1,520 feet of logging road laid out and constructed, and 26 management plans on 2,854 acres.

Progress in Structural Measures: Five structures planned; 2 multiple purpose and 3 single purpose construction of Site #1 has been completed at a cost of \$790,756. A supplemental contract to do additional clearing within the flood pool has been completed. The valves have been closed to raise the water level to the first stage and the lake has been stocked with fish. The structure program is 20 percent completed.

Progress in Obtaining Easements and Rights-of-Way: A large part of the property needed for Site #2 has been obtained. Negotiation is continuing for the balance. Land rights work to date - Site #1, 15 landowners \$35,900 (all local cost) and Site #2, landowners \$900,415 to date (\$138,915 PL-566 and \$761,500 local) for land rights.

Relocation Payments: An agreement between the Department of

Transportation acting for the Department of Natural Resources and the Soil Conservation Service was signed December 15, 1975 to handle displacements on Site #2. The total cost was estimated to be \$132,805 with the federal share being \$59,231 (44.6 percent). To date \$13,282 (\$5,924 PL-566 and \$7,358 local) has been expended involving five landowners or occupants.

Case Histories of Watershed Project Benefits: No benefits have been recorded but the river rose noticeable less during one storm due to stormwater retention in the partially complete Site #1.

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Upper Manokin Watershed (PL-566) Somerset County

Fiscal Year 1977

Project in Brief: Authorized - December 1, 1965. Estimated completion - fiscal year 1979. Area - 7,883 acres. Sponsors - Somerset Soil Conservation District, Somerset County Commissioners, and the town of Princess Anne. Estimated total cost - \$458,909 PL-566 and \$304,000 other. Principal problems - flooding and inadequate drainage on farm lands, floodwater damage to roads and bridges, and the need for water based recreational facilities. The average farm size is 85 acres and all but 4 are family farms. Approximately 125 parcels are located outside the town limits and have cropland and/or forest land. Approximately 65 percent of the area is in forest cover; 28 percent is cropland and pasture, and 7 percent is in other uses.

Progress in Land Treatment: There are 93 operating units, involving 6,827 acres within the watershed. Forty-six operating units totalling 3,927 acres are under cooperative agreement with the Somerset Soil Conservation District. Forty-five of the farms totalling 3,816 acres have basic conservation plans. An estimated 162,104 feet of open drainage has been completed to date. One thousand, seven hundred and one acres of conservation cropping systems; and 1,399 acres of crop residue management; 10 acres of pasture and hay land plantings, and 49 acres of pasture and hay land management have been applied to date. Two hundred acres of minimum tillage have been completed. Two ponds are managed for fish production. To date, forestry accomplishments consist of 331,600 trees planted on 390 acres. Two hundred twenty-eight acres of woodland improvement have been completed. Eighty percent of the watershed is adequately protected.

Progress In Structural Measures: Construction of 23.9 miles of channels and 35 water control structures was completed February, 1972 for \$135,998. A fish and wildlife structure and basic facilities remain to be constructed.

A land rights agreement for structural measures on the fish and wildlife structure was signed February 20, 1968. The sponsors have secured most of the land rights.

An environmental assessment of the fish and wildlife structure area is 90 percent complete. An EIS may need to be prepared depending upon the layout of the facility chosen by the sponsors.

Case Histories of Watershed Project Benefit: A six inch rainstorm in less than ten hours on August 29, 1969, created flooding of a main highway and high school basement. No damage to the highway was reported following the storm. However, extensive damage to the high school heating plant was reported. The high school was located in the flood plain. Farmers in the watershed reported no damage from the storm. There was some damage to the channel, however, on February 2, 1971, a three inch rainstorm again flooded the same highway but did not cause any other damage. On June 22 and 23, 1972, during Hurricane Agnes, no particular damage was done other than a washout of small water control structure. Approximately 4 to 5 inches of rain fell during the three day period.

From August 20 through April 21, 1973, 6.98 inches fell in the watershed in about a twelve hour period. Flooding occurred again on N. Somerset Avenue, but no flooding was reported in the basement of the junior high school. There was some damage to a structure that provided access to a timber company's woodland. Some minor road damage occurred at one of the bulkheads on College Road. Overall damage was considered minor.

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Shingle Landing Watershed (PL-566) Worcester County

Fiscal Year 1977

Project in Brief: Authorized - November 26, 1968. Estimated completion - fiscal year 1979. Area - 11,670 acres of which 5,988 acres is cropland; 205 acres is pasture; 5,316 acres is woodland, and 161 acres is in other uses. One hundred percent of the land is in private ownership. Sponsors - Worcester Soil Conservation District and the County Commissioners of Worcester County. Estimated total project cost - \$645,860 (\$518,860 PL-566 and \$127,000 other). Principal problems - combination of floodwater and inadequate drainage causes reduced crop yields, limits diversification, increases crop production costs, limits the effectiveness of lime and fertilizer and retards the economic growth of the area.

Progress in Land Treatment: There are 181 operating units in the watershed of which 72 are district cooperations with 7,668 acres and 71

have basic conservation plans on 7,476 acres. Two hundred seventy-six thousand, three hundred and ninety feet of drainage surface field ditches; 3,265 of subsurface drains, and 6 farm ponds have been installed to date. Planned forestry practices include 80 acres of managed woodland and five management plans involving 150 acres of woodland to reduce runoff and to recharge groundwater, to be accomplished with the assistance of the Maryland State Department of Forests and Parks in cooperation with the U.S. Forest Service. Forest land treatment already accomplished totals 93 acres of planting loblolly pine and hydrological treatment. Two woodland management plans, covering 46 acres, have been written. One wildlife habitat development covering 28 acres is now developed. To date, 33 percent of planned cropland treatment and 15 percent of forest land treatment is accomplished. Eighty-seven percent of the watershed is adequately protected.

Progress in Structural Measures: All of the design surveys are completed for this 49.5 mile drainage improvement project. Twenty-nine point seven miles of multiple purpose channel have been constructed at a cost of \$314,478. Structural measures are 60 percent complete.

Watershed Events: On July 25, 1975, Shingle Landing Watershed received 8 inches of rain in 6 hours. Middle Branch had \$3,100 damage done by trees blown over and undercut. These trees were left from one-sided construction. This damage has been repaired.

Services of the U.S. Department of Agriculture are available to all.

